APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Francis C. Hand, Esq.
c/o Carella, Byme, Bain, Gilfillan, Cecchi,
Stewart & Olstein
6 Becker Farm Road
Roseland, NJ 07068

EXAMINER
DAVIS, ZACHARY A

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	10/062,799	SKERPAC, VALENE
	Examiner	Art Unit	
	Zachary A. Davis	2437	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *30 June 2010*.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *1,2,4-8,11,14 and 16-18* is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) *1,2,4-8,11,14 and 16-18* is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All   b) ☐ Some * c) ☐ None of:
      1. ☐ Certified copies of the priority documents have been received.
      2. ☐ Certified copies of the priority documents have been received in Application No. _____.
      3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1.   A request for continued examination under 37 CFR 1.114, including the fee set

forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this

application is eligible for continued examination under 37 CFR 1.114, and the fee set

forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action

has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 30 June

2010 has been entered.

2.   By the above submission, Claims 1, 2, 4, 5, 16, and 17 have been amended. No

claims have been added or canceled. Claims 1, 2, 4-8, 11, 14, and 16-18 are currently

pending in the present application.

Response to Arguments

3.   Applicant's arguments with respect to claims 1, 2, 4-8, 11, 14, and 16-18 have

been considered but are moot in view of the new ground(s) of rejection.

4.   To the extent that Applicant's arguments are applicable to the new grounds of

rejection, they are not persuasive. In particular, Applicant argues that the phrases

generated in Higgins, "Speaker Verification Using Randomized Phrase Prompting" are

not randomly generated one-time phrases in which each word is randomly generated

(see pages 11-14 of the present response). The Examiner respectfully disagrees. The

phrases in Higgins are explicitly described as randomly generated, and while there is a

small number of words available (56 in the example at Higgins, page 90, section 2), the

number of permutations of the available words is large (approximately 175000 for a

three word phrase, and it is further noted that four three-word phrases are used for each

verification trial, giving 56^{12}, or approximately $9.5*10^{20}$ possible sets of phrases, see

Higgins, page 90, section 2). Given the vast number of phrases, the chance of reusing

a particular phrase is extremely small, and thus the phrases are considered to be "one-

time". Further, in Higgins, each word in the phrase is randomly chosen from the

database of potential words (again, see page 90, section 2).

Claim Objections

5.   The objections to Claims 1, 4, and 16 for informalities are withdrawn in light of

the amendments to the claims.

Claim Rejections - 35 USC § 112

6.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

7.   Claim 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite

for failing to particularly point out and distinctly claim the subject matter which applicant

regards as the invention.

        Claim 1 recites "wherein each word is randomly generated" in line 5. It is not

clear if this is intended to refer to each word in the challenge phrases, or to each word in

the first database. This renders the claim indefinite. For purposes of interpreting the

prior art, it has been assumed that this is intended to refer to each word in the challenge

phrase, comparable to the other independent claims as amended.

Claim Rejections - 35 USC § 103

8.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set
> forth in section 102 of this title, if the differences between the subject matter sought to be patented and
> the prior art are such that the subject matter as a whole would have been obvious at the time the
> invention was made to a person having ordinary skill in the art to which said subject matter pertains.
> Patentability shall not be negatived by the manner in which the invention was made.

9.   Claims 1, 2, 4-8, 11, 14, and 16-18 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Hattori, US Patent 6094632, in view of Higgins et al, "Speaker

Verification Using Randomized Phrase Prompting".

        In reference to Claim 1, Hattori discloses a biometric security system including a

station for receiving input information, which is representative of a user, from the user

and generating a signal responsive thereto (column 9, lines 5-11, where an ID is input);

a database having a plurality of words and language rules for randomly generating one-

time challenge phrases (see column 9, lines 19-47; column 8, line 65-column 9, line 5,

where "specified text" is provided to the user, which is a random phrase, see also

column 9, lines 61-64); a database having biometric models of users (column 9, lines 5-

20; column 11, lines 3-11, where a reference pattern of a registered speaker is stored;

see also column 11, lines 17-42, and column 12, lines 14-54, noting the general

references to plural speakers); and a controller that receives and validates the signal as

representative of the user, where the controller communicates with the database that

generates one-time challenge phrases for the user to speak exactly (column 8, line 65-

column 9, line 5; column 9, lines 61-64), and communicates with the station to receive a

spoken response and generate a second signal that represents the response (column 9,

lines 5-11, the phrase is uttered by the unknown speaker), to validate voice information

by speaker recognition (column 9, lines 21-28; column 11, lines 3-11) and verify voice

information by speech recognition if the challenge phrase is matched exactly (column 9,

lines 21-28; column 10, line 56-column 11, line 2), and to validate the spoken response

to the challenge as representative of the user if the validation by speaker recognition

and verification by speech recognition succeed (column 11, lines 12-16). However,

Hattori does not explicitly disclose that each word in the one-time challenge phrase is

randomly generated or processing the entire signal for both speech and speaker

recognition.

Higgins discloses a biometric security system that includes a database having a

plurality of words and language rules for randomly generating one-time challenge

phrases (see page 90, section 2, where phrases are generated at random subject to

syntactic constraints) and a controller that processes the entire signal received from the user for speaker recognition and speech recognition and validates the spoken response if both the validation by speaker recognition and verification by speech recognition succeed (see pages 92-95, section 3.3 "Verification", where it is determined whether the claimant was speaking, i.e. speaker recognition is performed, and whether the input utterance was spoken as prompted, i.e. speech recognition is performed to determine whether the exact challenge phrase was spoken). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the system of Hattori to include the random phrase generation and processing of the entire signal for speaker and speech recognition, as taught by Higgins, in order to have a robust algorithm (Higgins, page 89, section 1) and to prevent an imposter from knowing the prompted phrases in advance (Higgins, page 90, section 2).

Claims 2 and 7 are directed to methods corresponding substantially to the system of Claim 1, and are rejected by a similar rationale, noting further that Hattori and Higgins also disclose a private and personal challenge phrase (see Hattori, column 8, line 65-column 9, line 5).

In reference to Claim 8, Hattori and Higgins disclose everything as described above in reference to Claim 2. Neither Hattori nor Higgins explicitly discloses establishing a session time out limit; however, Official notice is taken, and it has been admitted as prior art due to the inadequate traversal of such Official notice, that it is well known in the art to establish a session time out in order to require that authentications

must take place within a specific time period, so that the probability of an imposter being able to take more sophisticated deceptive actions is decrease. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the methods of Hattori to include a time out, in order to increase security and to realize the above noted predictable result.

In reference to Claim 4, Hattori discloses a biometric security system including a station for receiving input information, which is representative of a user, from the user and generating a first signal responsive thereto (column 9, lines 5-11, where an ID is input); a database having a plurality of words and language rules for randomly generating one-time challenge phrases (see column 9, lines 19-47; column 8, line 65-column 9, line 5, where "specified text" is provided to the user, which is a random phrase, see also column 9, lines 61-64); a database storing a biometric model of a user (column 9, lines 5-20; column 11, lines 3-11, where a reference pattern of a registered speaker is stored); and a controller receiving and validating the first signal, where the controller further randomly generates and forwards a word phrase as a challenge for a user to speak exactly (column 8, line 65-column 9, line 5; column 9, lines 61-64), receives and compares with the challenge a spoken response to the challenge (column 9, lines 5-11), and verifies the response as exactly matching the challenge (column 9, lines 21-28; column 10, line 56-column 11, line 2), and where the controller additionally validates the response if the response matches the stored model (column 9, lines 21-28; column 11, lines 3-11), and the controller issues an authentication signal if both the

response matches the phrase and the response is representative of the user (column

11, lines 12-16). However, Hattori does not explicitly disclose that each word in the

one-time challenge phrase is randomly generated or processing the entire signal for

both speech and speaker recognition.

Higgins discloses a biometric security system that includes a database having a

plurality of words and language rules for randomly generating one-time challenge

phrases (see page 90, section 2, where phrases are generated at random subject to

syntactic constraints) and a controller that processes the entire signal received from the

user for speaker recognition and speech recognition and validates the spoken response

if both the validation by speaker recognition and verification by speech recognition

succeed (see pages 92-95, section 3.3 "Verification", where it is determined whether the

claimant was speaking, i.e. speaker recognition is performed, and whether the input

utterance was spoken as prompted, i.e. speech recognition is performed to determine

whether the exact challenge phrase was spoken). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify

the system of Hattori to include the random phrase generation and processing of the

entire signal for speaker and speech recognition, as taught by Higgins, in order to have

a robust algorithm (Higgins, page 89, section 1) and to prevent an imposter from

knowing the prompted phrases in advance (Higgins, page 90, section 2).

In reference to Claim 18, Hattori further discloses storing words and language

rules in a plurality of language sets specific to different subject areas (see, for example,

column 9, lines 19-47; column 8, line 65-column 9, line 5; column 9, lines 61-64, words

and phrases in English; see also column 11, lines 18-37, disclosing use of Japanese

language).

Claims 5 and 6 are directed to methods corresponding substantially to the

system of Claim 4, and are rejected by a similar rationale, noting that Hattori and

Higgins disclose a multiplicity of users and stored biometric models (Hattori, column 11,

lines 17-42, and column 12, lines 14-54, noting the general references to plural

speakers), and noting further that Hattori and Higgins also disclose a private and

personal challenge phrase (see Hattori, column 8, line 65-column 9, line 5, for

example).

In reference to Claim 11, Hattori and Higgins disclose everything as described

above in reference to Claim 5. Neither Hattori nor Higgins explicitly discloses

establishing a session time out limit; however, Official notice is taken, and it has been

admitted as prior art due to the inadequate traversal of such Official notice, that it is well

known in the art to establish a session time out in order to require that authentications

must take place within a specific time period, so that the probability of an imposter being

able to take more sophisticated deceptive actions is decrease. Therefore, it would have

been obvious to one of ordinary skill in the art at the time the invention was made to

modify the methods of Hattori to include a time out, in order to increase security and to

realize the above noted predictable result.

In reference to Claim 14, Hattori and Higgins disclose everything as described

above in reference to Claim 5; however, neither Hattori nor Higgins explicitly discloses

encrypting or digitally signing the spoken response. Official notice is taken, and it has been admitted as prior art due to the lack of traversal of such Official notice, that it is well known in the art to encrypt data when privacy of that data is needed and/or if that data will be sent over an insecure channel. Further, Official notice is taken, and it has been admitted as prior art due to the lack of traversal of such Official notice, that it is well known in the art to use a digital signature when it is necessary to verify the integrity of data, i.e. to make sure that the data has not been altered. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the method of Hattori to include encryption, in order to increase the privacy and security of the data, and to include a digital signature, in order to allow the integrity of the data to be verified.

In reference to Claims 16 and 17, Hattori discloses a speech biometric security system including a station for receiving input information, which is representative of a user, from the user and generating a signal responsive thereto (column 9, lines 5-11, where an ID is input); a database having a plurality of words and language rules for randomly generating one-time challenge phrases (see column 9, lines 19-47; column 8, line 65-column 9, line 5, where "specified text" is provided to the user, which is a random phrase, see also column 9, lines 61-64); a database having biometric models of users (column 9, lines 5-20; column 11, lines 3-11, where a reference pattern of a registered speaker is stored; see also column 11, lines 17-42, and column 12, lines 14-54, noting the general references to plural speakers); and a controller that receives and

validates the signal as representative of the user, where the controller communicates

with the database that generates one-time challenge phrases for the user to speak

exactly (column 8, line 65-column 9, line 5; column 9, lines 61-64), and communicates

with the station to receive a spoken response and generate a second signal that

represents the response (column 9, lines 5-11), to process the response by speaker

recognition and issue a first validation signal in response to a match between the

spoken response and a stored biometric model (column 9, lines 21-28; column 11, lines

3-11) and simultaneously process the response by speech recognition and issue a

second validation signal if the spoken response exactly matches the challenge phrase

(column 9, lines 21-28; column 10, line 56-column 11, line 2), and issue a positive

authentication signal in response to the first and second validation signals (column 11,

lines 12-16). However, Hattori does not explicitly disclose that each word in the one-

time challenge phrase is randomly generated or processing the entire signal for both

speech and speaker recognition.

Higgins discloses a biometric security system that includes a database having a

plurality of words and language rules for randomly generating one-time challenge

phrases (see page 90, section 2, where phrases are generated at random subject to

syntactic constraints) and a controller that processes the entire signal received from the

user for speaker recognition and speech recognition and validates the spoken response

if both the validation by speaker recognition and verification by speech recognition

succeed (see pages 92-95, section 3.3 "Verification", where it is determined whether the

claimant was speaking, i.e. speaker recognition is performed, and whether the input

utterance was spoken as prompted, i.e. speech recognition is performed to determine

whether the exact challenge phrase was spoken). Therefore, it would have been

obvious to one of ordinary skill in the art at the time the invention was made to modify

the system of Hattori to include the random phrase generation and processing of the

entire signal for speaker and speech recognition, as taught by Higgins, in order to have

a robust algorithm (Higgins, page 89, section 1) and to prevent an imposter from

knowing the prompted phrases in advance (Higgins, page 90, section 2).

Conclusion

10.   The prior art made of record and not relied upon is considered pertinent to

applicant's disclosure.

>   a.   Tattan et al, US Patent 7702918, discloses a system that uses speech
>
>   recognition and speaker recognition on a customer's voice and performs a
>
>   challenge-response protocol using random phrases.

Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Zachary A. Davis whose telephone number is (571)272-

3870. The examiner can normally be reached on weekdays 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Emmanuel Moise can be reached on (571) 272-3865. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Zachary A Davis/
Primary Examiner, Art Unit 2437